REMARKS

Status of the Claims

Claims 4 through 17 are presently pending in the application and presently stand rejected. The Examiner has noted that Claim 13 would be allowable if rewritten to overcome rejections under 35 USC 112.

Rejection Under 35 USC 112

With respect to claim 4, the Examiner previously indicated that the phrase "substantially free of sulfided hydrogenation metal" was indefinite. The specification makes clear on page 6, lines 26 to 27, that no sulfided hydrogenation metal is intended, using the language "The molecular sieve used in the process of the invention does not contain the sulfided hydrogenation metal disclosed in U.S Patent No. 3,780,123." It is respectfully submitted that this language would clearly differentiate the present process from that of Suggitt et al., regardless of whether the term used for such differentiation in the claim were "substantially free" or "essentially free."

Applicants wish to clarify an earlier statement that "it would be clear to one of ordinary skill in the art that 'substantially free of sulfided hydrogenation metal' would mean that none was intentionally added and that any amount present would be minimal." No sulfided hydrogenation metal is required in the process of the present invention, but the presence of any naturally occurring impurities or other minute amounts relative to the amounts indicated by Suggitt et al. might not interfere with the present invention, and would still be expected to fall within the scope of the claims.

It is respectfully noted that Suggitt et al. do not teach any range below 0.2 wt. % Group VIII metal and further that Suggitt et al. teach that a "similar catalyst with no metal present is virtually inactive within 24 hours" as compared to a catalyst having 5% which "can operate for hundreds of hours with only a slight loss in conversion rate." (Column 8, lines 53-57) It is respectfully submitted that in light of the present specification and the teaching of Suggitt et al., one of ordinary skill in the art would understand both "substantially free" and "essentially free."

In an attempt to clarify this distinction, the term "substantially" was replaced (by amendment dated March 12, 2003) with the term "essentially," which has been found to be definite under analogous circumstances. *In re Marosi*, 710 F.2d 799, 218 USPQ 289 (CCPA 1983) The Examiner rejected the amended claim 4, stating that the term "essentially" was new matter. Applicants respectfully request reconsideration of this rejection. The language of this application cited above is analogous to the language found to define "essentially" in *Marosi*.

In the alternative, Applicants request that the Examiner reconsider the original rejection of the term "substantially." Claim 17 was previously submitted to reinstate claim 4 as it was originally presented. It is submitted that the definition clearly differentiates from the process described in the Suggitt et al. patent (U.S. Patent No. 3,780,123). Accordingly, it is respectfully urged that the Examiner withdraw this rejection.

In *Marosi*, the parties agreed that there were minute but measurable quantities of alkali metal (however undesired) in the reagents utilized in appellants' synthesis. The appellants in *Marosi* distinguished their invention from the prior art with the limitation "essentially free of alkali metal." The court noted:

> It is well established that "claims are not to be read in a vacuum, and limitations therein are to be interpreted in light of the specification in giving them their 'broadest *reasonable* interpretation.' " In re Okuzawa, 537 F.2d 545, 548, 190 USPQ 464, 466 (CCPA 1976).

It is respectfully submitted that Claims 4 and 17 are both sufficiently definite to convey to one skilled in the art that the inventor, at the time of filing, had possession of the claimed invention. It is further submitted that these claims particularly point out and distinctly claim the subject matter which applicant regards as the invention, and that no specific numerical quantity is required. Accordingly, it is respectfully requested that the Examiner withdraw the rejections under 35 USC 112.

Rejection Under 35 USC 103(a)

Claims 4 through 10 and 14 through 16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Suggitt et al. (U.S. Patent No. 3,780,123). In particular, the Examiner argues that Suggitt et al. teach a process of disproportionation of cumene in the presence of a mordenite catalyst to produce a product containing benzene and a mixture of diisopropylbenzene isomers.

It is respectfully noted that Suggitt et al. require the presence of a sulfided hydrogenation metal and teach that the catalyst would deactivate rapidly without the metal, providing required ranges of 0.2 wt.% to 10 wt.%, thereby teaching away from the present invention with "substantially" or "essentially" no sulfided hydrogenation metal.

It is further noted that the disclosure of Suggitt et al. also requires a sulfide compound added to the reaction mixture to maintain catalyst activity (column 3, line 73 through column 4, line16; Example VI; and claim 1). Claims 4 through 17 of the present application require neither sulfided hydrogenation metal nor a sulfide compound in the feed in order to disproportionate cumene to produce DIPB isomers. Applicants respectfully note that the omission of an element and retention of its function is an indicia of unobviousness. *In re Edge*, 359 F.2d 896, 149 USPQ 556 (CCPA 1966)

The courts have further noted that it is " logical and reasonable to infer that one teaching a chemical reaction process would set out the *least* number of reactions thought necessary to accomplish the desired objective. Thus, one skilled in the art who reads the teaching would have to presume that if the reactants were not combined in the manner shown, some adverse side reaction or no reaction at all would occur." *In re Freed*, 425 F.2d 785, 788, 165 USPQ 570, 572 (CCPA 1970). Applicants respectfully note that the Examiner does not appear to have considered this critical difference between the process described in the present invention and the process of Suggitt et al.

The Examiner has rejected claims 11 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Suggitt et al. (U.S. Patent No. 3,780,123) in view of Calabro et al. (U.S. Patent No. 6,049,018). Applicants respectfully apply the same arguments as above

with respect to Suggitt et al. and respectfully submit that unobviousness in light of the Suggitt et al. disclosures renders further discussion of Calabro et al. unnecessary.

It is respectfully submitted that the claims are in condition to be allowed under 35 U.S.C. § 103(a), and the Examiner is respectfully requested to withdraw this rejection.

CONCLUSION

In view of the foregoing comments, allowance of this application is earnestly solicited. Should the Examiner have any further comments or questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,

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